

REMARKS/ARGUMENTS

In the Office Action mailed on September 20, 2010, claims 1-9 were rejected. However, Applicants hereby request reconsideration of the application in view of the below-provided remarks. No claims have been amended, added, or canceled.

Claim Rejections under 35 U.S.C. 103

Claims 1 and 3-9 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Lu et al. (Lu, Xiaolan et al., 'Power Efficient H.263 Video Transmission Over Wireless Channels,' Proc. 2002 IEEE Int'l. Conf. on Image Processing, vol. 2 of 3, pgs. 533-36 (9-2002), hereinafter "Lu") in view of Sullivan et al. (Sullivan, Gary J. et al., "Rate-Distortion Optimization for Video Compression," IEEE Signal Processing Magazine, vol. 15, no. 6, pgs. 74-90 (11-1998), hereinafter "Sullivan"). Claim 2 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Lu in view of Sullivan, and further in view of the Examiner's Official Notice. However, Applicants respectfully submit that the pending claims are patentable over the cited references for the reasons provided below.

Independent Claim 1

Claim 1 recites in part:

"A method of encoding a sequence of pictures, a picture being divided into blocks of data, said encoding method comprising the steps of:

- computing a residual error block from a difference between a current block contained in a current picture and a candidate area using a prediction function,
- computing an entropy of the residual error block,
- computing an overall error between said current block and said candidate area,
- estimating a power consumption of a video processing device adapted to implement said prediction function,
- computing a rate-distortion value on the basis of the entropy, the overall error and the estimated power consumption of the video processing device,
- applying the preceding steps to a set of candidate areas using a set of prediction functions in order to select a prediction function according to the rate-distortion value."

(emphasis added)

Applicants respectfully assert that a *prima facie* case of obviousness has not been established with respect to claim 1. Specifically, Applicants respectfully assert that Lu in

view of Sullivan does not teach all of the limitations of claim 1. In addition, Applicants respectfully assert that the articulated reasoning provided in the Office Action with respect to combining the teachings of Lu and Sullivan is not based on a rational underpinning.

Lu in view of Sullivan does not teach all of the limitations of claim 1.

Applicants respectfully assert that Lu does not teach the limitations as alleged in the Office Action. In particular, Applicants respectfully assert that Lu does not teach the limitation “*computing a residual error block from a difference between a current block contained in a current picture and a candidate area using a prediction function*” (emphasis added), as recited in claim 1. The Office Action suggests that the Introduction section of Lu teaches the above-identified limitation of claim 1. (See page 2 of the Office Action). However, Applicants respectfully disagree.

The Introduction section of Lu teaches that a power consumption mode of an H.263 encoder is developed and that an optimal power allocation problem among a video coder, a channel coder and a transmitter in a wireless communication system is studied. (See the Introduction section of Lu). In addition, the Introduction section of Lu teaches that the same methodology for the developed power consumption model also applies to other video compression standards employing a block based hybrid coding framework. However, the Introduction section of Lu is completely silent as to “*computing a residual error block from a difference between a current block contained in a current picture and a candidate area using a prediction function*” (emphasis added), as recited in claim 1. In addition, the Office Action suggests that the Introduction section of Lu cites a term “standard block based encoder,” which can perform the claimed step. (See page 2 of the Office Action). However, the Introduction section of Lu does not recite the term “standard block based encoder” as alleged in the Office Action. In fact, the term “standard block based encoder” does not appear anywhere in the text of Lu. Accordingly, Applicants respectfully assert that Lu does not teach the above-identified limitation of claim 1.

In addition, Applicants respectfully assert that Lu does not teach the limitation “*computing an entropy of the residual error block*” (emphasis added) or the limitation

“computing an overall error between said current block and said candidate area” (emphasis added), as recited in claim 1. The Office Action suggests that the second section of Lu teaches the above-identified limitations of claim 1. (See page 2 of the Office Action). However, Applicants respectfully disagree.

The second section of Lu teaches performance models used to characterize various components in the transmitter side of a wireless communication system that consists of an H.263 codec, a Reed-Solomon (RS) codec, and a two-state Markov channel. (See the second section of Lu). However, the second section of Lu is completely silent with respect to *“computing an entropy of the residual error block”* (emphasis added) and with respect to *“computing an overall error between said current block and said candidate area”* (emphasis added), as recited in claim 1. Accordingly, Applicants respectfully assert that Lu does not teach the above-identified limitations of claim 1.

Furthermore, Applicants respectfully assert that Lu does not teach the limitation *“computing a rate-distortion value on the basis of the entropy, the overall error and the estimated power consumption of the video processing device”* (emphasis added), as recited in claim 1. The Office Action suggests that the fourth section of Lu teaches the above-identified limitation of claim 1. (See pages 2 and 3 of the Office Action). However, Applicants respectfully disagree.

The fourth section of Lu teaches that source coding distortion can be reduced by increasing the encoding rate R_s . (See the fourth section of Lu). However, the fourth section of Lu is completely silent with respect to *computing a rate-distortion value on the basis of an estimated power consumption of a video processing device*. In addition, as described above, Lu does not teach the limitation *“computing an entropy of the residual error block”* (emphasis added) or the limitation *“computing an overall error between said current block and said candidate area”* (emphasis added), as recited in claim 1. Accordingly, Applicants respectfully assert that Lu does not teach the limitation *“computing a rate-distortion value on the basis of the entropy, the overall error and the estimated power consumption of the video processing device”* (emphasis added), as recited in claim 1.

Thus, Applicants respectfully assert that Lu in view of Sullivan does not teach all of the limitations of claim 1. As a result, Applicants respectfully assert that a *prima facie* case of obviousness has not been established with respect to claim 1.

The articulated reasoning provided in the Office Action with respect to combining the teachings of Lu and Sullivan is not based on a rational underpinning.

In order to establish a *prima facie* case of obviousness of a claim under 35 U.S.C. 103, the Office Action must present a clear articulation of the reason why the claimed invention would have been obvious. MPEP 2142 (citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007)). The analysis must be made explicit. *Id.* Additionally, rejections based on obviousness cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *Id.*

As described above, the Office Action suggests that Lu teaches all of the limitations of claim 1 except the limitation “*applying the preceding steps to a set of candidate areas using a set of prediction functions in order to select a prediction function according to the rate-distortion value.*” (See pages 2 and 3 of the Office Action). The Office Action cites Sullivan as teaching the above-identified limitation of claim 1 and concludes that “it would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the concept taught by Sullivan et al in Xiaoan Lu et al to optimize selection of certain coding functions such as the prediction function.” (See page 3 of the Office Action).

However, the only statement made by the Examiner in support of an obviousness rejection of claim 1 is that “it would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the concept taught by Sullivan et al in Xiaoan Lu et al to optimize selection of certain coding functions such as the prediction function” (emphasis added). Applicants respectfully assert that this is a mere conclusory statement that fails to clearly articulate a rationale in support of the obviousness rejection, as required by the MPEP and *KSR*. In particular, the Examiner fails to explain why the combination of Lu and Sullivan would “optimize selection of certain coding functions such as the prediction function,” as stated by the Examiner. The Examiner also fails to

explain how Lu and Sullivan would be combined to “optimize selection of certain coding functions such as the prediction function,” as stated by the Examiner. The Examiner’s identification of the teachings of Lu and Sullivan, along with the conclusory statement of “it would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the concept taught by Sullivan et al in Xiaoan Lu et al to optimize selection of certain coding functions such as the prediction function” without any rationale in support of that conclusion, does not satisfy the requirements for establishing a *prima facie* case of obviousness.

Assuming (because there is no explicit statement of the Examiner’s rationale in the Office Action) that the Examiner’s rationale is that there is some teaching, suggestion, or motivation that would have led one of ordinary skill to combine the cited references’ teachings to arrive at the claimed invention, MPEP §2143 (G) and the applicable case law require the following:

To reject a claim based on this rationale, Office personnel must resolve the *Graham* factual inquiries. Then, Office personnel must articulate the following:

- (1) a finding that there was some teaching, suggestion, or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
- (2) a finding that there was reasonable expectation of success; and
- (3) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.

... If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. (emphasis added).

If the Applicants’ assumption of the Examiner’s rationale as described above is correct, then Applicants are entitled to have the foregoing required items articulated. If the Examiner’s rejection is based on some other rationale, Applicants are entitled to know what that rationale is and to be given an opportunity to respond. If an explanation of the Examiner’s rationale is presented in the next Office Action, the next Office Action should not be made final because Applicants would not be given an opportunity to respond. “The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.” MPEP §2142.

In view of the foregoing, Applicants respectfully submit that the Examiner has merely provided a conclusory statement in support of the obviousness rejection and failed to clearly articulate a rational to support the conclusion, as required by the MPEP and *KSR*. Because “rejections based on obviousness cannot be sustained by mere conclusory statements,” Applicants respectfully assert that the Examiner has failed to provide *prima facie* support for the obviousness rejection with respect to claim 1. As a result, Applicants respectfully assert that a *prima facie* case of obviousness has not been established with respect to claim 1.

Dependent Claims 2-9

Claims 2-9 depend from and incorporate all of the limitations of independent claim 1. Applicants respectfully assert that claims 2-9 are allowable at least based on an allowable claim 1. Additionally, claim 2 is allowable for further reason, as described below.

Dependent Claim 2

Applicants respectfully traverse the “Official Notice” taken in the Office Action with respect to claim 2. The MPEP provides very strict guidelines to limit the availability of Official Notice. In particular, the MPEP states it is not appropriate for the Examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. MPEP 2144.03(A). The MPEP also states it is never appropriate to rely solely on “common knowledge” in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. MPEP 2144.03(A) (citing *In re Zurko*, 258 F.3d at 1385 (Fed. Cir. 2001)). Furthermore, if Official Notice is taken without providing documentary evidence, the basis of the Official Notice must be set forth explicitly. The Examiner must provide specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. MPEP 2144.03(B) (citing *In re Soli*, 317 F.2d at 946 (CCPA 1963) and *In re Chevenard*, 139 F.2d at 713 (CCPA 1943)).

Here, the Office Action fails to provide evidentiary support for the assertion of Official Notice. In particular, the Office Action states that “it is well known in the prior art to address decoder power and distortion optimization.” (See page 5 of the Office Action). However, no prior art reference is cited to support the assertion of Official Notice. In addition, the Office Action fails to provide factual findings to support the rejection based on Official Notice. There is no discussion of the facts, if any, that the Examiner might rely on to form such conclusion. The MPEP is clear that factual findings must be provided in order to properly support a rejection based on Official Notice. Given that the Office Action provides no specific factual findings and no explanation of related technical and scientific reasoning, the rejection based on Official Notice is improper. Accordingly, Applicants respectfully traverses the Official Notice taken by the Examiner in the Office Action.

Accordingly, Applicants respectfully submit that the Office Action fails to establish a *prima facie* rejection with respect to claim 2 because the Official Notice is improper.

CONCLUSION

Generally, in this Response to the Office Action, Applicants have not raised all possible grounds for (a) traversing the rejections of the Office Action or (b) patentably distinguishing any new or currently amended claims (i.e., over the cited references or otherwise). Applicants however, reserve the right to explicate and expand on any ground already raised and/or to raise other grounds for traversing and/or for distinguishing, including, without limitation, by explaining and/or distinguishing the subject matter of the Application and/or any cited reference at a later time (e.g., in the event that this Application does not proceed to issue with the current pending claims, or in the context of a continuing application). Applicants submit that nothing herein is, or should be deemed to be, a disclaimer of any rights, acquiescence in any rejection, or a waiver of any arguments that might have been raised but were not raised herein, or otherwise in the prosecution of this Application, whether as to the original claims or as to any of the new or amended claims, or otherwise. Without limiting the generality of the foregoing,

Applicants reserve the right to reintroduce one or more of the original claims in original form or otherwise so as to claim the subject matter of those claims, both/either at a later time in prosecuting this Application or in the context of a continuing application.

Applicants respectfully request reconsideration of the claims in view of the remarks made herein. A notice of allowance is earnestly solicited.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account **50-4019** pursuant to 37 C.F.R. 1.25. Additionally, please charge any fees to Deposit Account **50-4019** under 37 C.F.R. 1.16, 1.17, 1.19, 1.20 and 1.21.

Respectfully submitted,

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